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26 March 1969

LESSON TITLE : Aeromedical Programs
DIVISION : Aeromedical Staff/OSA
INSTRUCTORS :
DATE/TIME/PLACE : 1 April 1969/1345-1630/D/SA Conference Room

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PART I - OVERVIEW

1. LESSON OBJECTIVE: The objective of this lesson is for each student to become familiar with programs of the Aeromedical Staff/OSA. Specifically, the student will become familiar with the general physiological requirements for life-support equipment, the life support system developed for and used in PROJECT IDEALIST,

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2. INSTRUCTIONAL AIDS: Vu-Graph Slides and overhead projector, 35 mm Slides and projector, 16 mm Movie and Projector.

3. TIME REQUIRED: 2 hours 45 min.

4. PLAN OF PRESENTATION: The instructor will introduce the lesson by describing the overall organization and function of the Aeromedical Staff. Life-Support Programs will be discussed in detail by describing the physiological requirements for IDEALIST

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life-support equipment, i. e., total barometric pressures, altered partial pressures, thermal balance, and protection during emergency ejections. In order to correlate physiological requirements with equipment in use, the life-support system as used in the U-2R will be discussed in detail.

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PART II - TEACHING GUIDE

A. INTRODUCTION

1. Aeromedical Staff: Organization and Function
2. Life-Support Program Overview:

Equipment types and categories

- a. Aircraft Systems
- b. Aircrew Systems
- c. Training

B. Physiological Requirements for Life-Support Equipment

1. Total Barometric Pressure
 - a. Mechanical effects of Pressure Change
 - (1) Areas affected
 - (2) Prevention/Protection
2. Altered Partial Pressures

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- a. Decompression sickness
 - (1) Areas affected
 - (2) Protection/Prevention
 - b. Boiling of Body Fluids
 - (1) Areas affected
 - (2) Protection
 - c. Hypoxia
 - (1) Cause and Effects
 - (2) Protection
3. Thermal Balance
- a. Heat Loads
 - b. Heat Loss
 - c. Protection
 - (1) From Heat
 - (2) From Cold
4. Escape Provisions
- a. Hazards
 - (1) Decision
 - (2) Decompression
 - (3) Separation
 - (4) Windblast
 - (5) Deceleration
 - (6) Spin

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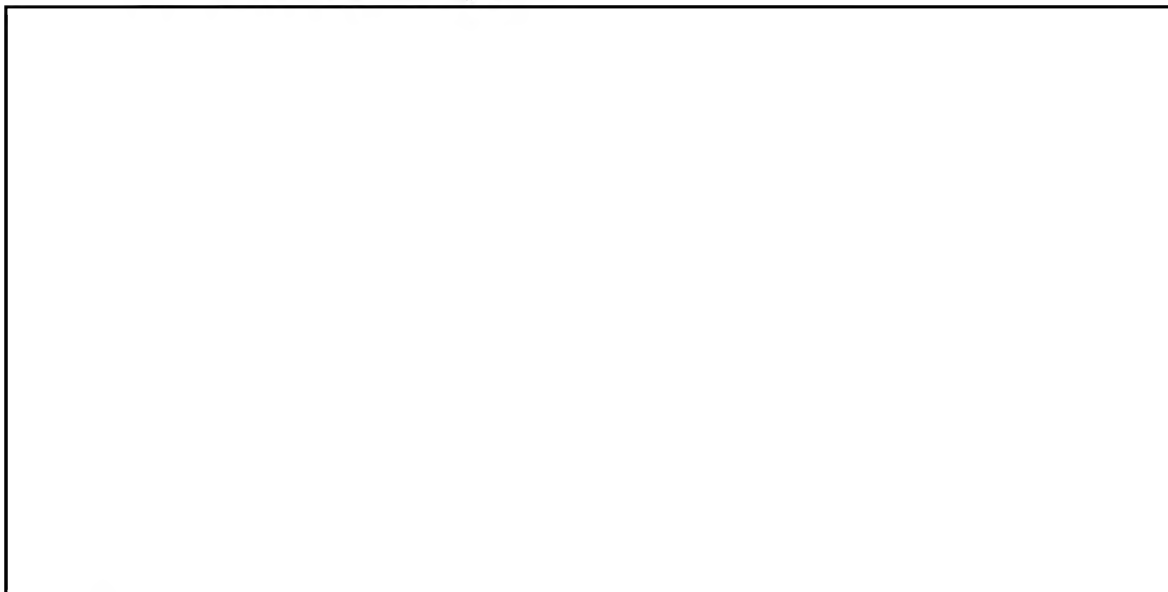
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- (7) Hypoxia
- (8) Frostbite
- (9) Parachute Opening Shock
- (10) Parachute Landing and Canopy Release
- (11) Survival

C. A DESCRIPTION OF U-2R LIFE-SUPPORT EQUIPMENT

- 1. Pressurization/Air Conditioning/Ventilation System
- 2. Oxygen System
- 3. Ejection System
- 4. Pilots Protective Assembly
- 5. Emergency Oxygen System
- 6. Survival Equipment

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